ABSTRACT

[A method of bulk manufacturing SiC sensors is disclosed and claimed. Materials other than SiC may be used as the substrate material. Sensors requiring that the SiC substrate be pierced are also disclosed and claimed. A process flow reversal is employed whereby the metallization is applied first before the recesses are etched into or through the wafer. Aluminum is deposited on the entire planar surface of the metallization. Photoresist is spun onto the substantially planar surface of the Aluminum which is subsequently masked (and developed and removed). Unwanted Aluminum is etched with aqueous TMAH and subsequently the metallization is dry etched. Photoresist is spun onto the still substantially planar surface of Aluminum and oxide and then masked (and developed and removed) leaving the unimidized photoresist behind. Next, ITO is applied over the still substantially planar surface of Aluminum, oxide and unimidized photoresist. Unimidized and exposed photoresist and ITO directly above it are removed with Acetone. Next, deep reactive ion etching attacks exposed oxide not protected by ITO. Finally, hot phosphoric acid removes the Al and ITO enabling wires to connect with the metallization. The back side of the SiC wafer may be also be etched.]

A micro electromechanical accelerometer comprising a proof mass, an ohmic contact, a bridge and a substrate. The bridge interconnects the proof mass and the substrate. The bridge includes an epilayer,. The substrate can be of n-type or p-type. The substrate is selected from the group of SiC, AlN, BC, The ohmic contact comprises layers of Titanium, Tantalum Disilicide, and Platinum.